

**CLAIMS:**

1. A clip-on accessory adapted to hitch onto eyeglasses having a frame of predetermined geometry, an optical lens being mounted in each half section of the frame, said accessory comprising a pair of filter lenses joined together by a bridge 5 which positions the filter lenses into registration with the optical lenses of the eyeglasses; each filter lens being formed from a blank milled in a computer-controlled machine to create a shaped lens having a geometry matching said predetermined geometry whereby the accessory is compatible with the eyeglasses and does not degrade its appearance.
- 10 2. An accessory as set forth in Claim 1 in which anchored on each of said filter lenses is at least one clip adapted to hitch onto the corresponding half section of the frame.
- 15 3. An accessory as set forth in Claim 1, in which the filter lenses possess filtration characteristics whereby when hitched onto said pair of eyeglasses, then convert these glasses into a pair of sunglasses.
4. An accessory as set forth in Claim 1, in which the filter lenses are adapted to filter out radiant energy damaging to the eyes of the wearer of the eyeglasses.
5. An accessory as set forth in Claim 1, in which the filter lens has optical properties which when combined with those of the optical lens the eyeglasses then 20 form a compound optical lens.
6. A machine for shaping a blank to create a filter lens to be included in a clip-on accessory having a pair of filter lenses which when the accessory is hitched onto the frame of a pair of eyeglasses having a pair of optical lenses mounted in half sections of the frame, then lie in registration with these half sections; said 25 frame having a predetermined geometry that is matched by the geometry of the filter lenses; said machine comprising:
  - A. At least one rotary worktable to support the blank to be shaped, and a first motor for driving the worktable;
  - B. A drill bit unit provided with a rotating drill bit ;

C. An elevator supporting said drill bit unit and shiftable along a vertical axis to raise or lower the drill bit with respect to the blank, and a second motor for driving the elevator;

5 D. A carriage carrying said elevator and shiftable along a horizontal axis to move the drill bit back and forth with respect to said blank, said carriage being driven by a third motor; and

E. A computer to coordinate the operation of the first, second and third motors to cause said drill bit to shape the blank to form a filter lens of the desired geometry.

10 7. A machine as set forth in Claim 6, in which said first, second and third motors are stepping motors each powered by a train of dc pulses the polarity of which determines the extent and direction of movement.

8. A machine as set forth in Claim 7, in which said computer controls the stepping motors by varying the number of pulses in the train and their polarity.

15 9. A machine as set forth in Claim 6, in which the drill bit drills holes in said blank to receive plugs of a clip for anchoring the clip on the filter lens so that the accessory can be hitched onto the eyeglasses.

10. A machine as set forth in Claim 6, in which the drill bit unit is driven to rotate continuously by a dc motor.

20 11. A machine as set forth in Claim 10, in which the drill bit unit is self-sufficient and can be decoupled for its drive motor.

12. A machine as set forth in Claim 6, in which digitally stored in a database of the computer is digital data regarding the predetermined geometry of the frame, from which data the computer controls the motors to produce a filter lens having a

25 matching geometry.

13. A machine as set forth in Claim 12, further including an electronic scanner to scan the frame of the eyeglasses to which the clip-on is to be hitched, the scanner supplying the computer with a digital image of the frame from which the data stored in the database is obtained.

14. A machine as set forth in Claim 7, having a pair of worktables on each of which a blank is supported so as to provide a pair of filter lenses for the accessory.
15. A machine as set forth in Claim 14, in which each worktable is driven by said first motor through a shaft, further including means to tension said shaft to maintain the worktable at a set position.
16. A machine as set forth in Claim 15, in which the tension means is provided by a spiral spring surrounding said shaft, one end of the spring being attached to the shaft, the other end to a fixed body.